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VIA ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: **FOLLOW-UP TO *EX PARTE* MEETING**
IB Docket No. 02-10
Use of Satellite Earth Stations on Board Vessels

Dear Ms. Dortch:

On behalf of Broadband Maritime, Inc. ("Broadband Maritime"), this letter provides a follow-up response to questions posed by the International Bureau (the "Bureau") staff at an *ex parte* meeting held on May 5, 2004 regarding the above-referenced docket. The meeting was reported by letter filed in this docket on May 6, 2004.

At the meeting, Broadband Maritime suggested that earth station on vessel ("ESV") 2.4 meter antennas operating within the parameters required by Annex 2 to International Telecommunications Union ("ITU") Resolution 902 adopted at WRC-03 would protect adjacent satellites spaced two degrees apart. The staff asked whether the parameters of Annex 2 were adopted to protect two-degree or three-degree spaced satellites. Because many international satellites, such as those operated by Intelsat, in addition to United States domestic satellites are spaced two degrees apart, Annex 2 of Resolution 902 was written to protect satellites that are spaced two degrees apart.

The staff also asked how the cost of using both Ku-band and C-band with dual feed antennas compared to the cost of using C-band only. Broadband Maritime considers its cost information to be business proprietary, and Broadband Maritime would suffer competitive harm if such information were placed in the public record. However, Broadband Maritime is willing to state that upgrading the ESV antennas to dual feed capability plus the ongoing leasing of Ku-band transponder capacity in addition to C-band transponder capacity would double the operating costs of providing broadband ESV service, thereby rendering the provision of dual

band service economically infeasible. If the Commission desires further cost information, Broadband Maritime would be willing to provide its actual cost data subject to a protective order.

The staff also asked about the power levels of ESVs. Broadband Maritime operates its transmitters with 1 watt of output power. Terrestrial fixed facilities generally operate on the horizontal plane. For an ESV, the minimum angle of elevation of the main lobe is 22 degrees. Assuming the minimum angle of elevation and a ten degree off axis pointing on the horizontal plane, the following table shows that in order to receive harmful interference, the terrestrial facility must be within 300 feet of the ESV.¹ Since a distance of 300 feet would place the terrestrial facility at the pier (or in the water right along side the shipping lane), it would be in only the most unusual of circumstances where an ESV would be close enough to cause interference to a terrestrial facility.

Tx antenna Gain	dbi	-2.58
Tx power	dbm	30.00
ESV effective EIRP	dbm	27.42
Path loss	db	-87.29
MW antenna Gain (to ESV direction)	db	20.00
Out of band Rx attenuation	db	-40.00
ESV IF signal level (at MW receiver)	dbm	-79.87
Microwave IF Signal	dbm	-60.00
FW Minimum S/N	db	7.00
minimum S/I	db	19.87
S/(I+N)	db	6.78
S/N-S/(N+I)	db	0.22
Distance between systems	feet	300

Lastly, Broadband Maritime mentioned that even though it is not aware of any instances where Broadband Maritime has caused harmful interference to any terrestrial operations anywhere, there have been instances where Broadband Maritime has experienced harmful interference from terrestrial fixed operations in some foreign ports. In such instances Broadband Maritime has immediately shut down operations and has not permitted its ESVs to operate in those ports on those frequencies. The staff asked how it is possible that interference is not reciprocal between ESVs and fixed terrestrial operations.

¹ The interference distance would be a little further for an ESV pointing directly at the terrestrial facility. However, that would take the rare combination of both the ESV operating at the minimum angle of elevation and the ESV pointing directly at the terrestrial facility.

There are two reasons why interference is not reciprocal. First, ESVs are designed to track the peak satellite transmission. This process (called "Step-Track" or "Conscan") is very sensitive to interference from fixed terrestrial transmitters. When an ESV is in the presence of a high power fixed terrestrial transmitter, the ESV's tracking mechanism will drift away from the satellite toward the terrestrial transmitter. When the satellite lock is lost, the antenna will shut off the transmitter and will start searching for the satellite. Second, as a general rule, ESVs operate at a lower power level than fixed terrestrial transmitters. Because of this power difference, harmful interference can be one-way.

Please address any inquiries regarding this matter to the undersigned.

Very truly yours,

Eliot J. Greenwald

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